We claim:

1. A method of inhibiting smooth muscle cell proliferation or restenosis of a blood vessel following injury to vascular tissue in a region of the blood vessel of a patient in need of treatment thereof, comprising:

implanting a biocompatible matrix having seeded therein or thereon dissociated endothelial cells at a site near to or at the injury to or blockage of vascular tissue in an amount effective to inhibit smooth muscle cell proliferation.

2. The method of claim 1 wherein the injury arises from angioplasty, coronary artery bypass surgery, peripheral bypass surgery, or organ transplantation.

3. The method of claim 1 wherein the matrix is in a form selected from the group consisting of gels, foams, suspensions, microcapsules, solid polymeric supports, or fibrous structures.

4. The method of claim 1 wherein the cells are obtained by biopsy of the patient into which the matrix is implanted.

5. The method according to claim 1 wherein the matrix is biodegradable.

6. The method of claim 5 wherein the matrix is formed of a material selected from the group consisting of polyhydroxy acids, polyorthoesters, polyanhydrides, proteins, carbohydrates, polysaccharides, polyphosphazenes, polyalkylene oxides and combinations thereof.

7. The method of claim 1 wherein the matrix is formed of a material selected from the group consisting of ethylene vinyl acetate, polyvinyl alcohol, silicone, polyurethane, non-biodegradable

polyesters, polyethyleneoxide-polypropyleneoxide, tetrafluoroethylene and combinations thereof.

8. The method of claim 1 wherein the matrix further comprises biologically active compounds selected from the group consisting of anti-inflammatory agents, prostaglandins, prostanoids, angiotensin and related compounds, tyrosine kinase inhibitors, immunosuppressants, vitamins, glucocorticoids, anti-oxidants, free radical scavengers, peptide hormones, angiogenic and angiogenic inhibitory factors, and combinations thereof.

9. The method of claim 1 wherein the cells are first cultured in the matrix *in vitro*, then implanted *in vivo*.

10. The method of claim 1 wherein the matrix is surgically implanted around the blood vessel.

11. A composition for inhibiting intimal smooth muscle cell proliferation or restenosis of a blood vessel following injury to vascular tissue of the blood vessel in a patient in need of treatment thereof, comprising a biocompatible matrix having seeded therein or thereon dissociated endothelial cells in an amount effective to inhibit smooth muscle cell proliferation.

12. The composition of claim 11 wherein the amount is effective to treat an injury arising from angioplasty, coronary artery bypass surgery, peripheral bypass surgery, or organ transplantation.

13. The composition of claim 11 wherein the matrix is in a form selected from the group consisting of gels, foams, suspensions, microcapsules, solid polymeric supports, or fibrous structures.

14. The composition of claim 11 wherein the cells are selected from the group consisting of autologous cells, allograft cells, xenograft cells, and genetically engineered cells.

15. The composition according to claim 1 wherein the matrix is biodegradable.

16. The composition of claim 15 wherein the matrix is formed of a material selected from the group consisting of polyhydroxy acids, polyorthoesters, polyanhydrides, proteins, carbohydrates, polysaccharides, polyphosphazenes, and combinations thereof.

17. The composition of claim 11 wherein the matrix is formed of a material selected from the group consisting of ethylene vinyl acetate, polyvinyl alcohol, silicone, polyurethane, non-biodegradable polyesters, polyethyleneoxide-polypropyleneoxide, tetrafluoroethylene, and combinations thereof.

18. The composition of claim 11 wherein the matrix further comprises biologically active compounds selected from the group consisting of anti-inflammatory agents, prostaglandins, prostanoids, angiotensin and related compounds, tyrosine kinase inhibitors, immunosuppressants, vitamins, glucocorticoids, anti-oxidants, free radical scavengers, peptide hormones, angiogenic and angiogenic inhibitory factors.

19. The composition of claim 11 wherein the matrix surface is modified to alter cell-matrix interactions.